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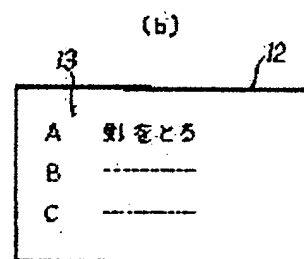
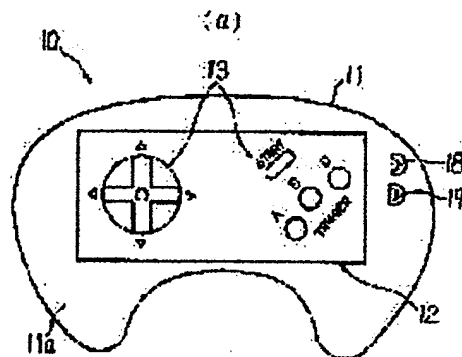
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(54) LIQUID CRYSTAL CONTROLLER

(57)Abstract:

PURPOSE: To provide a liquid crystal controller which can make various controls in accordance with a game which is played instead of a predetermined uniformed control.

CONSTITUTION: The liquid crystal controller is provided with a controller body 11 connected to a game machine body, a liquid crystal monitor (liquid crystal image) 13 arranged on an outer surface 11a of the controller body 11 to display operation information sent from the game machine body, and a touch panel 12 which is constituted so as to see the liquid crystal monitor 13 and located in an upper layer of the liquid crystal monitor 13, and provides a control signal to the game machine body based on a pressing operation on a position which is corresponding to the display on the liquid crystal monitor 13.



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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The liquid crystal controller by one example of this invention is shown, and it is the top view of an example where (a) displayed the top view and (b) displayed the screen of others [liquid crystal display monitor].

[Drawing 2] Connection between a liquid crystal controller, the body of a game machine, and a TV apparatus is shown, (a) is an approximate account Fig. and (b) is an approximate account Fig. under play of an operator.

[Drawing 3] The image display in an airplane operation game is shown, (a) is the explanatory view of the screen of a TV apparatus, and (b) is the explanatory view of the screen of a liquid crystal display monitor.

[Drawing 4] The image display in a piano performance game is shown, (a) is the explanatory view of the screen of a TV apparatus, and (b) is the explanatory view of the screen of a liquid crystal display monitor.

[Drawing 5] The image display in a role playing game is shown, (a) is the explanatory view of the screen of a TV apparatus, and (b) is the explanatory view of the screen of a liquid crystal display monitor.

[Drawing 6] The image display in an adventure game is shown, (a) is the explanatory view of the screen of a TV apparatus, and (b) is the explanatory view of the screen of a liquid crystal display monitor.

[Drawing 7] The image display in a simulation game (war game) is shown, and, for (a), the explanatory view of the screen of a TV apparatus and (b) are [the explanatory view of the screen the second operator's liquid crystal display monitor and (d of the explanatory view of the screen the first operator's liquid crystal display monitor and (c))] the explanatory views of the screen the third operator's liquid crystal display monitor.

[Drawing 8] The moving method of the battle means in the liquid crystal display monitor of drawing 7 is shown, and they are the explanatory view of the arrangement condition of a battle means to move (a), an explanatory view in the condition that, as for (b), the successive range was specified, and an explanatory view in the condition that, as for (c), the display of a battle means was changed into the location wishing migration.

[Drawing 9] An example of the state of war in the simulation game of drawing 7 is shown, and, for (a), the explanatory view of the screen the first operator's liquid crystal display monitor and (b) are [the explanatory view of the screen the third operator's liquid crystal display monitor and (d of the explanatory view of the screen the second operator's liquid crystal display monitor and (c))] the explanatory views of the screen of a TV apparatus.

[Drawing 10] The image display in 3D dungeon game (game which wanders about in a maze) is shown, and, for (a), the explanatory view of the screen of a TV apparatus and (b) are [the explanatory view of the screen the second operator's liquid crystal display monitor and (d of the explanatory view of the screen the first operator's liquid crystal display monitor and (c))] the explanatory views of the screen the third operator's liquid crystal display monitor.

[Drawing 11] An example of the state of war in 3D dungeon game of drawing 10 is shown, and (a) is [the explanatory view of the screen the second operator's liquid crystal display monitor and (c of the explanatory view of the screen the first operator's liquid crystal display monitor and (b))] the explanatory views of the screen of a TV apparatus.

[Description of Notations]

- 10 -- Liquid crystal controller
- 11 -- Body of a controller
- 11a -- Outside surface
- 12 -- Touch panel
- 13 -- Liquid crystal display monitor (liquid crystal screen)
- 14 -- Connecting cord
- 15 -- Body of a game machine
- 16 -- TV apparatus
- 17 -- Game cartridge
- 18 -- Tongue for brightness adjustment
- 19 -- Tongue for contrast adjustment
- P -- Operator

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the liquid crystal controller which sends out the control signal to the body of a game machine.

[0002]

[Description of the Prior Art] Conventionally, it connects with the body of a game machine, and the controller to which the control signal to the body of a game machine is sent out by actuation of an operator is known. When an operator does press actuation of the push button, the control signal of attack initiation for example, is sent out or an operator does inclination actuation of a cross-joint key or the joy stick, a controller can send out the control signal of a travelling direction and can control a game through this controller.

[0003]

[Problem(s) to be Solved by the Invention] However, in a push button, or a cross-joint key or a joy stick, it is only being able to perform only actuation of classes set up mechanically, such as the number, inclination direction, etc., but being able to perform uniform control for which it opted beforehand, and there was a trouble of uniformizing the play itself.

[0004] The purpose of this invention is to offer the liquid crystal controller whose various control according to the uniform game which was decided beforehand, and which is controlled not but played is made in view of the above-mentioned trouble, and is attained.

[0005]

[Means for Solving the Problem] It is prepared in the outside surface of the body of a controller connected to the body of a game machine, and said body of a controller, the vision of the liquid-crystal screen which displays the actuation information sent from said body of a game machine, and said liquid-crystal screen is formed possible, and the above-mentioned purpose is located in the upper layer of said liquid-crystal screen, and is attained by the liquid-crystal controller which has the touch panel which outputs a control signal to said body of a game machine based on press actuation of the part corresponding to a display corresponding to the display of said liquid-crystal screen.

[0006]

[Function] Since image display of the actuation information is carried out to the liquid crystal screen of a liquid crystal controller by changing the body of a game machine into a game initiation condition according to this invention, an operator looks at the display image of a liquid crystal screen through a touch panel, does press actuation of the part corresponding to a display of a touch panel, chooses actuation information suitably, sends out the control signal of a game to the body of a game machine, and performs a game.

[0007]

[Example] Hereafter, the liquid crystal controller by one example of this invention is explained with reference to a drawing. As shown in drawing 1 (a), the liquid crystal controller 10 has the body 11 of a controller, the touch panel 12 which outputs a control signal, and the liquid crystal display monitor

(liquid crystal screen) 13 which displays actuation information.

[0008] As the liquid crystal controller 10 is shown in drawing 2, it connects with the body 15 of a game machine through the connecting cord 14, and TV apparatus 16 is connected to the body 15 of a game machine (refer to drawing 2 (a)). And when Operator P operates the liquid crystal controller 10 according to the scene on the screen of TV apparatus 16, a control signal is sent out from (the drawing 2 (b) reference) and the liquid crystal controller 10 to the body 15 of a game machine, and a game can be played.

[0009] while having the configuration and magnitude which the body 11 of a controller is formed with the board of profile fanning, and Operator P has it in a hand based on an ERUGONOMIKKU design, and are easy to operate it -- outside-surface 11a -- the touch panel 12 is mostly laid underground in the center. A touch panel 12 consists of an oblong rectangle-like board, and forms a part of outside-surface 11a of the body 11 of a controller. This touch panel 12 is formed with the colorless or colored transparent body whose vision of a liquid crystal display monitor 13 becomes possible through a touch panel 12, and can output a control signal to the body 15 of a game machine by pressing an outside surface.

[0010] A liquid crystal display monitor 13 is formed in the same configuration and magnitude as a touch panel 12, is prepared in the outside surface of the body 11 of a controller with the touch panel 12 located in the upper layer, and displays the actuation information sent from the body 15 of a game machine. Therefore, Operator P can check by looking the actuation information displayed on a liquid crystal display monitor 13 through a touch panel 12.

[0011] The actuation information displayed on a liquid crystal display monitor 13 is stored in the game cartridge 17 (refer to drawing 2) with which the body 15 of a game machine was equipped with the game program, and is sent to a liquid crystal display monitor 13 through the body 15 of a game machine. This actuation information is displayed as various images corresponding to the game program in which the image processing was carried out by image control means (not shown), such as a chip for a display, for example, which was stored in the game cartridges 17, such as a push button, a cross-joint key (refer to drawing 1 (a)), or various commands (refer to drawing 1 (b)), while signal processing is carried out by in-and-out force-control means (not shown), such as a controller chip for a communication link.

[0012] And by carrying out press actuation of the part corresponding to a display of the touch panel 12 corresponding to the display image of a liquid crystal display monitor 13, signal processing of the control operation to the actuation information from a touch panel 12 is carried out by in-and-out force-control means, such as a controller chip for a communication link, and it is sent out to the body 11 of a game machine as a control signal of a game. These in-and-out force-control means and an image control means may be prepared in any of the body 11 of a controller, or the body 15 of a game machine.

[0013] In addition, the tongue 18 for brightness adjustment for adjusting the brightness of a liquid crystal display monitor 13 and the tongue 19 for contrast adjustment for adjusting the contrast of a liquid crystal display monitor 13 are formed in the outside-surface 11a side of the body 11 of a controller. Next, an operation of a liquid crystal controller is explained. First, after connecting the liquid crystal controller 10 to the body 15 of a game machine to which TV apparatus 16 was connected through a connecting cord 14, the body 15 of a game machine is equipped with a game cartridge 17.

[0014] Then, Operator P has the liquid crystal controller 10 in a hand, changes the body 15 of a game machine into a game initiation condition, and begins a game. Since image display of the actuation information is carried out to the liquid crystal display monitor 13 of the liquid crystal controller 10 by changing into a game initiation condition, Operator P looks at the display image of a liquid crystal display monitor 13 through a touch panel 12, does press actuation of the part corresponding to a display of a touch panel 12, chooses actuation information suitably, and sends out the control signal of a game to the body 11 of a game machine.

[0015] Below, the example of the various actuation information by the liquid crystal controller 10 is shown.

Control means, such as the same start button as the conventional controller, a trigger carbon button, and

a cross-joint key for direction directions, are displayed on the example 1 liquid crystal display monitor 13 (refer to drawing 1 (a)).

[0016] And according to advance of a game by which image display was carried out to the screen of TV apparatus 16, selection actuation of the part corresponding to the display according to a desired control means is carried out.

Some commands which can be executed in an alphabetic character are displayed on the example 2 liquid crystal display monitor 13 (refer to drawing 1 (b)).

[0017] And according to advance of a game by which image display was carried out to the screen of TV apparatus 16, selection actuation of the part corresponding to the display according to a desired command is carried out.

In an example 3 airplane operation game etc., the overview of the airplane under flight on the screen of TV apparatus 16 is displayed with a background (refer to drawing 3 (a)), and operation means, such as a throttle lever besides the various instruments in a cockpit and a flap lever, are displayed on a liquid crystal display monitor 13 (refer to drawing 3 (b)).

[0018] And checking the flight condition by which image display was carried out to the screen of TV apparatus 16, selection actuation of the part corresponding to the display according to a desired operation means is carried out, and an airplane is flown.

In an example 4 piano-performance game etc., the overview of a piano is displayed on the screen of TV apparatus 16 (refer to drawing 4 (a)), and the keyboard part which emits the sound needed for a liquid crystal display monitor 13 is displayed (refer to drawing 4 (b)).

[0019] And looking at the piano by which image display was carried out to the screen of TV apparatus 16, selection actuation of the part corresponding to the display according to a desired keyboard part is carried out, and a sound is made.

In example 5 role playing game etc., the conversation scene of the character is displayed on the screen of TV apparatus 16 with a background (refer to drawing 5 (a)), and each key of the keyboard for inputting words into a liquid crystal display monitor 13 is displayed (refer to drawing 5 (b)).

[0020] And according to the situation by which image display was carried out to the screen of TV apparatus 16, selection actuation of the part corresponding to the display according to a desired key is carried out, and words are emitted.

In example 6 adventure game etc., the character of a conversation scene is displayed on the screen of TV apparatus 16 (refer to drawing 6 (a)), and the alternative which becomes a liquid crystal display monitor 13 from some words is displayed (refer to drawing 6 (b)).

[0021] And according to the situation by which image display was carried out to the screen of TV apparatus 16, it talks by carrying out selection actuation of the part corresponding to the display according to desired alternative.

In example 7 simulation game (war game) etc., the whole battlefield map is displayed on the screen of TV apparatus 16 (refer to drawing 7 (a)), and the movable range of a battle means is displayed with the current position of battle means, such as the tank and airplane which Operator P can operate to a liquid crystal display monitor 13, a HEL, and **, (refer to drawing 7 (b)).

[0022] For example, when three operators P1, P2, and P3 perform a game, and each operator P has the liquid crystal controller 10 respectively, the movable range of the battle means according to each operator's P current position is similarly displayed on each liquid crystal display monitor 13 (refer to drawing 7 (c) and (d)). And each operator P battles by carrying out selection actuation of the part corresponding to the display according to a desired migration location, and advancing one's battle means to the enemy's line etc., checking the whole situation by which image display was carried out to the screen of TV apparatus 16.

[0023] An example of the moving method of this battle means is shown in drawing 8. Operator P touches a battle means to move first with a finger (refer to drawing 8 (a)). Then, the successive range according to the capacity of each battle means is specified by change of a color etc. (refer to drawing 8 (b)). Then, if a location to move is touched with a finger, the display of a battle means will be changed

into the location wishing migration from an old location (refer to drawing 8 (c)).

[0024] Moreover, an example of a state of war is shown in drawing 9. For example, when the first operator P1 devises an attack to the second operator P2, the scene where face to face was mutually stood against each liquid crystal display monitor 13 which the first operator P1 and second operator P2 have is displayed (refer to drawing 9 (a) and (b)), and the battle scene copies out on the screen of TV apparatus 16 (refer to drawing 9 (d)). In addition, a battle scene and the usual scene [be / no ****] are displayed on the third operator's P3 liquid crystal display monitor 13 (refer to drawing 9 (c)).

[0025] In an example 83D dungeon game (game which wanders about in a maze) etc., the whole maze map is displayed on the screen of TV apparatus 16 (refer to drawing 10 (a)), and the direction of Operator P which can be gone on is displayed on a liquid crystal display monitor 13 with Operator's P current position (refer to drawing 10 (b)).

[0026] For example, when three operators P1, P2, and P3 perform a game, and each operator P has the liquid crystal controller 10 respectively, the range according to each operator's P current position which can be gone on is similarly displayed on each liquid crystal display monitor 13 (refer to drawing 10 (c) and (d)). And it progresses, carrying out selection actuation of the part corresponding to the display according to a desired travelling direction of the inside of the whole map by which image display was carried out to the screen of TV apparatus 16.

[0027] Although a battle scene etc. occurs according to a situation when an operator P1 and an operator P2 meet in the middle of maze advance, the example is shown in drawing 11. An operator's P2 character is displayed on an operator's P1 liquid crystal display monitor 13, an operator's P1 character is displayed on the liquid crystal display monitor 13 of (the drawing 11 (a) reference) and an operator P2, respectively (refer to drawing 11 (b)), and a battle scene etc. is copied out on the screen of TV apparatus 16 (refer to drawing 11 (c)).

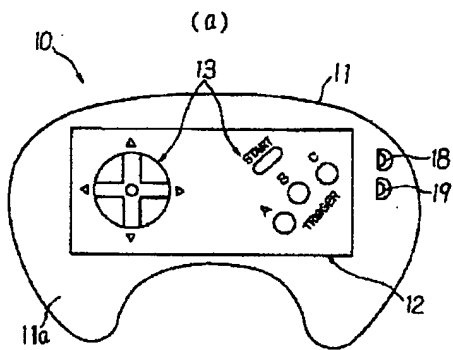
[0028] Thus, only actuation set up beforehand mechanically can be performed by making it the controller which prepared the liquid crystal screen, but the various control approaches corresponding to each of the game of various classes become possible to the conventional controller it was [controller] only being able to perform uniform control. Furthermore, since the graphic display in a controller becomes possible, a controller can be used as the second screen other than the screen of a TV apparatus, and diversification of the play approach is attained.

[0029]

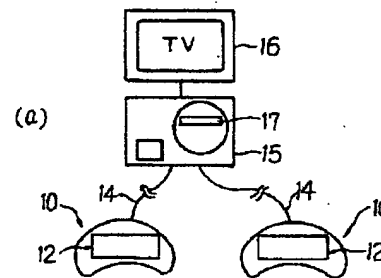
[Effect of the Invention] According to this invention the above passage, various control according to the uniform game which was decided beforehand and which is controlled not but played is attained.

[Translation done.]

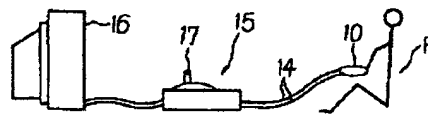
【図1】



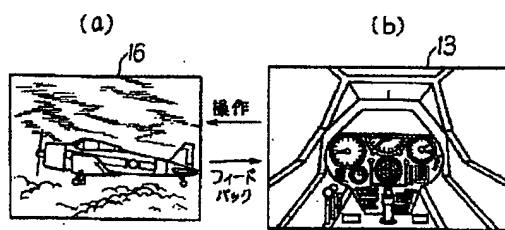
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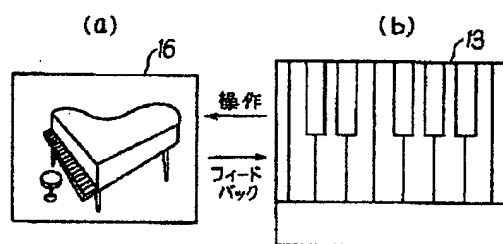
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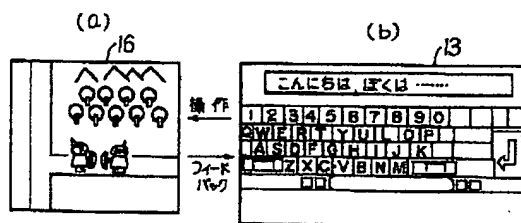
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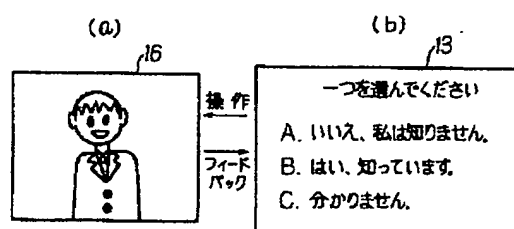
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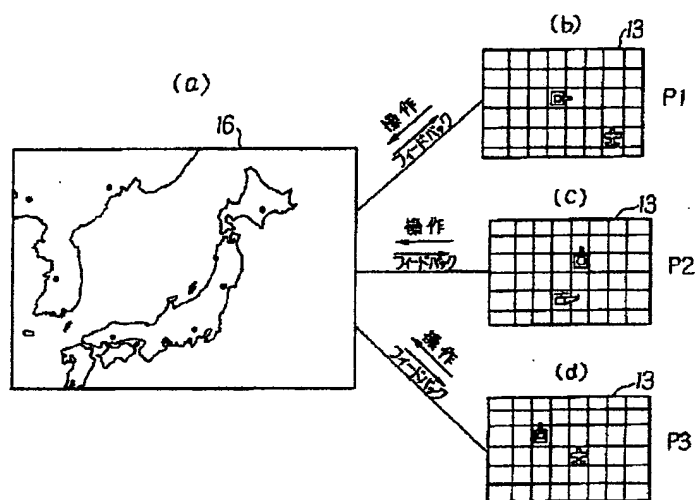
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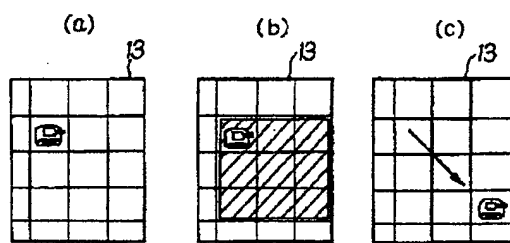
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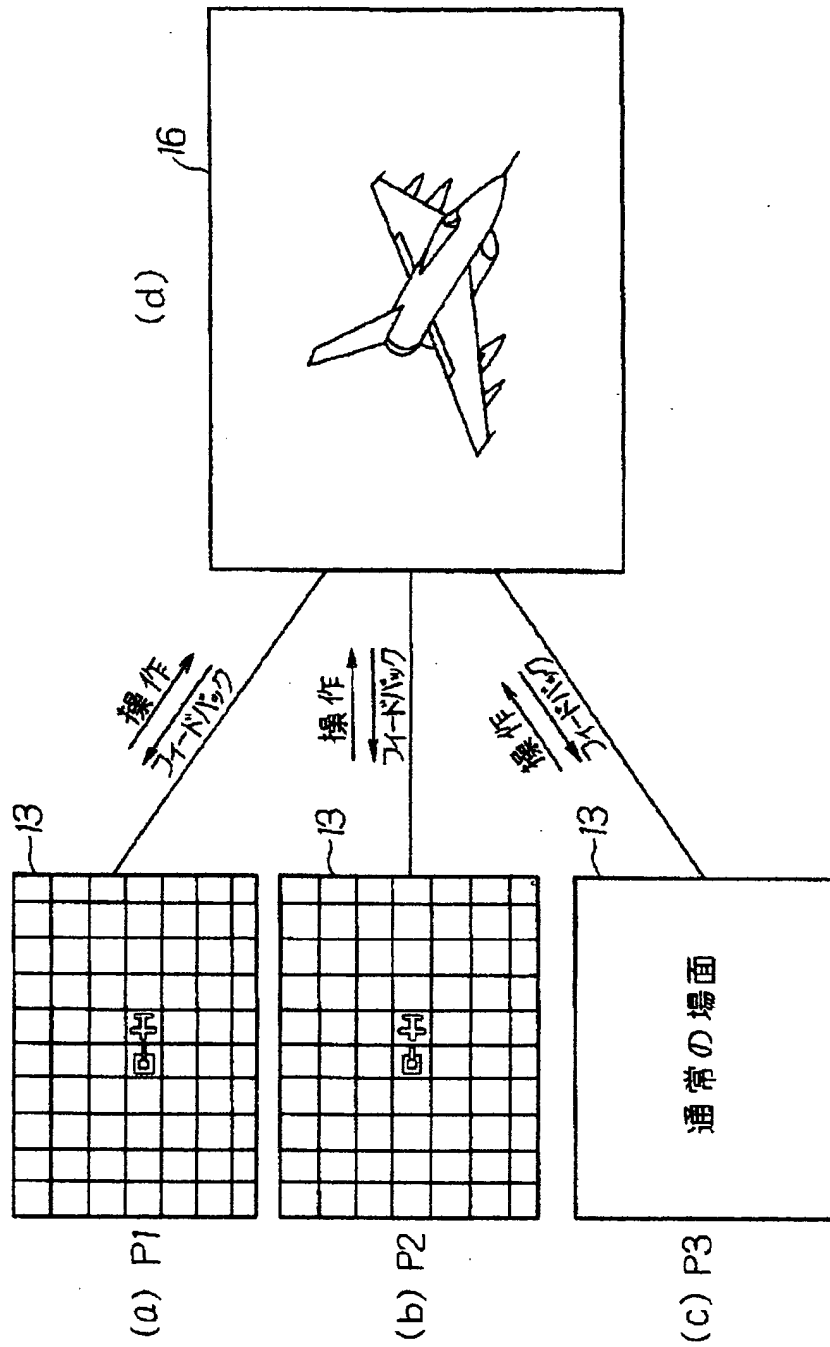
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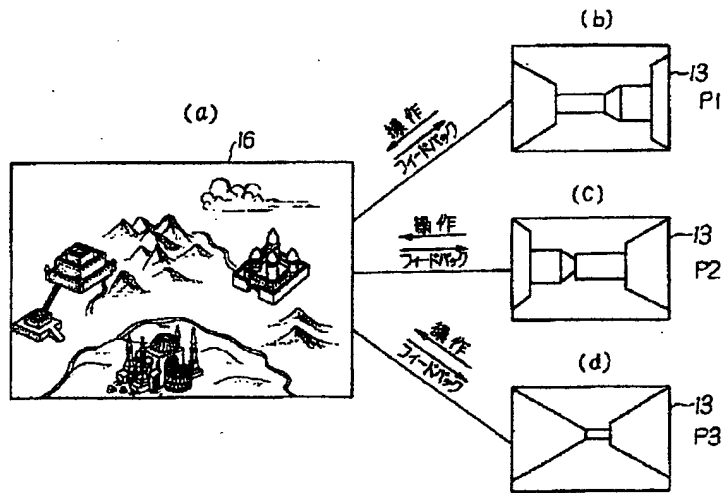
【図8】



【図9】



【図10】



【図11】

